1959 (74)

Reprinted from THE PHYSIOLOGIST
Volume 2, No. 3 August 1959
Made in United States of America

INTERMANUAL TRANSFER OF SOMESTHETIC DISCRIMINATIONS IN SPLIT-BRAIN RHESUS MONKEYS. Mitchell Glickstein* and R. W. Sperry. Div. of Biology, California Inst. of Tech., Pasadena

Section of the corpus-callosum has been shown to block interocular transfer of visual learning in chiasma-sectioned cats and monkeys, and the interpaw transfer in cats of tactual learning, including its motor, pedal-pushing components. By contrast, callosum-sectioned monkeys trained to perform tactual discriminations with one hand may show moderate to good transfer to the untrained hand. Further analysis using 4 monkeys with midline section of corpus-callosum and 5 unoperated controls showed that various components of the learned response did not transfer with equal ease. Motor Transfer: The motor pattern and testing set (reaching out and feeling the two test objects before selecting one or the other) readily transferred in 3 out of 4 experimentals, and 4 of the 5 controls. Sensory Transfer. With reversal training (previously negative stimulus changed to positive upon testing for transfer to the second hand) distinctive sensory knowledge transferred in only 1 out of 3 split-brain animals run to date, compared to strong transfer in both controls tested. Also, with re-reversal (retesting first hand with stimuli reversed to original values), all 3 experimentals tested so far showed no transfer; both normals showed strong transfer. One experimental, tested without reversal, showed immediate high-level but temporary transfer of sensory as well as motor components that survived through only 50 trials.